

User's Manual
Manuel Utilisateur
Manual del usuario

DTV & IPTV Tuner Module SB-03TM



English



Français



Español

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Important Information

Refer to the “Safety Precautions, Maintenance & Recommended Use” of the LCD Monitor in the User’s Manual for notes on handling.

Declaration

FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult your dealer or an experienced radio/TV technician for help.

If necessary, the user should contact the dealer or an experienced radio/television technician for additional suggestions.

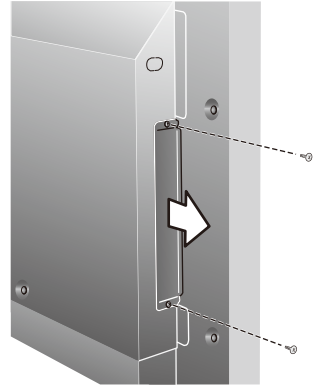
The user may find the following booklet, prepared by the Federal Communications Commission, helpful: “How to Identify and Resolve Radio-TV Interference Problems.” This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

Installation

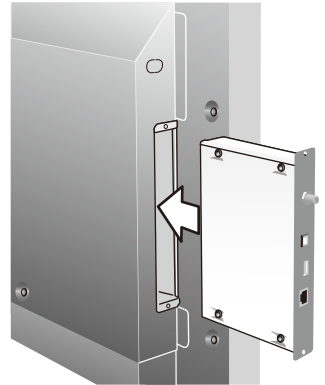
NOTE: Depending on your LCD monitor, you need to install this module with the optional "SB-02AM" adapter. Refer to the SB-02AM's Quick Start Guide for the installation.

**WARNING: Do not insert foreign objects inside the cabinet during installation.
Do not drop this module, optional slot cover and screws during installation.**

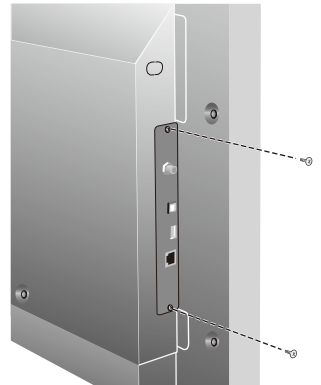
1. Turn off the main power to the LCD monitor.
2. Remove the LCD monitor's screws (x2 on the outside), and then remove the optional slot cover.



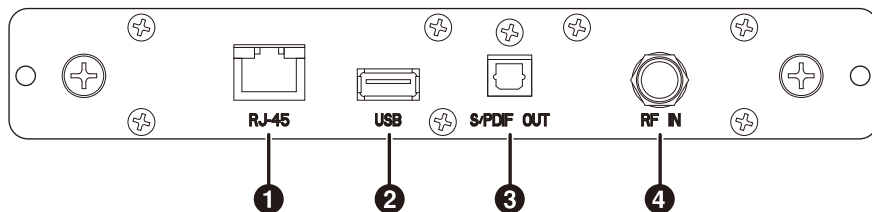
3. Insert this module into the LCD monitor.



4. Secure this module by using the two screws from step 2.
(Recommended Fasten Force: 49.0 N·cm - 68.6 N·cm
(5 kgf·cm - 7 kgf·cm))



Part Names



1. Ethernet port (RJ-45)

Ethernet port for used IPTV input.

2. USB

USB 2.0 Type A port for USB flash drive.

Insert a USB flash device when you execute Setting Copy function.

3. S/PDIF OUT (optical)

Digital audio output for connection to external digital audio system.

4. RF IN (F Type)

RF input that connects to your VHF/UHF Antenna or Cable TV Service.

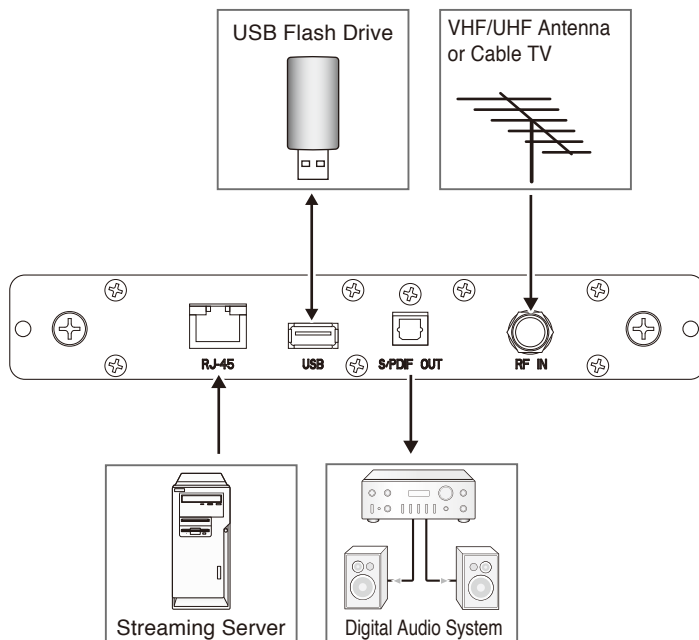
Connections

NOTE: Do not connect/disconnect cables when turning on the monitor or other external equipment as this may result in a loss of the monitor image.

Before making connections:

- * First turn off the power of all the attached equipment and make connections.
- * Refer to the user manual included with each separate piece of equipment.

Wiring Diagram



Basic Operation

Selecting Tuner

Press OPTION button on the remote.

Opening Tuner OSD menu

When the input signal of the monitor is "OPTION", press OPTION button to turn on/off the Tuner OSD.

NOTE : If your monitor's Wireless Remote Control has "OPTION MENU" button, press the button.

Wireless Remote Control

NOTE : Use your monitor's Wireless Remote Control. For details about procedures other than those listed below, or, if your Wireless Remote Control is different from the picture below, see the monitor's user's manual.

1. POWER button

Switches the power on/standby.

2. ASPECT button

Selects picture aspect, [FULL],[WIDE],[ZOOM] and [NORMAL].

3. OPTION button

Set Input signal to "OPTION". When "OPTION" is set, turn on/off the Tuner OSD.

4. KEYPAD

Press buttons to set and change passwords and change channel.

5. ENT button

Sets channels.

6. DISPLAY button

Turn on/off the current channel information.

7. MENU button

Turn on/off the monitor OSD menu.
Refer to your monitor's user's manual for more monitor OSD information.

8. UP/DOWN button

Act as ▲▼ button to move the highlighted area up or down to select items within OSD menu.

9. MINUS/PLUS (-/+) button

Act as ◀▶ button to move the highlighted area right or left to select items within OSD menu.

10. EXIT button

Returns to previous menu within OSD menu.

11. VOLUME UP/DOWN button

Increases or decreases audio output level.

12. GUIDE button

Turn on/off EPG (Electronic Program Guide).

13. CH +/- button

Moves channel up or down.

14. MUTE button

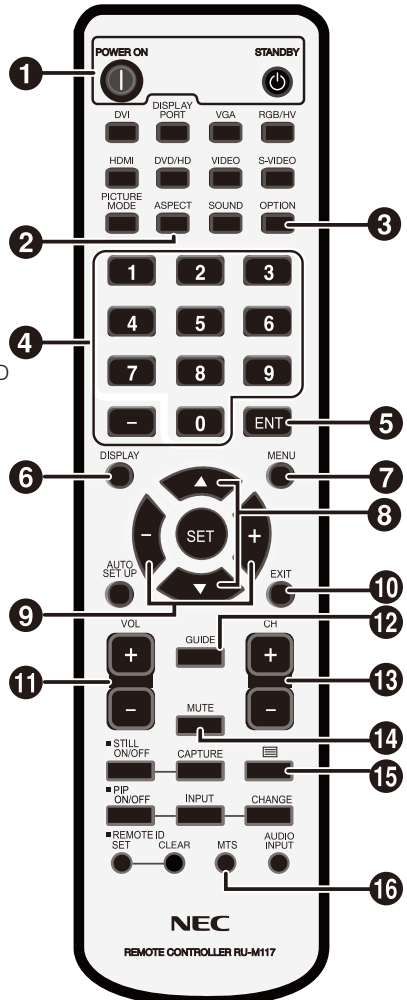
Turn on/off the audio mute.
When mute is on, S/PDIF OUT is also muted.

15. ☰ button

Activates closed captioning.

16. MTS button

Select Multi-language.



OSD (On-Screen-Display) Controls

Channel Search

When powering on for the first time, you will be prompted to scan and memorize all available channels from your RF input signal. To start this process, press OPTION button to display the TV OSD menu.

NOTE: Digital channels are indicated with a “-” followed by a number.

NOTE: When Channel Lock function is “On”, the Channel Search cannot be used. If Channel Lock is “On”, set it to “Off” before proceeding.

Auto Scan

Depending upon the RF input signal, you will need to scan for either off air (antenna) or cable channels.

Off Air Scan

1. On the “Tuner” menu page, press ▲▼ button to select “Channel Search” and press SET button. There are two sub-menu are listed.
 - (1) Auto Scan
 - (2) Manual Scan
2. Select “Auto Scan” and press SET button.
3. Select “Off Air” and press SET button.
4. Press SET button to start channel scanning.

NOTE: It takes several minutes to complete the wholes scanning process; the percentage bar displays the progress.

5. When the scan has been completed, “Scan finish.” message will be displayed. Press OPTION or EXIT button to leave this window. Press CH+ and CH- buttons to verify the channels found and memorized.

Cable Scan

1. Follow steps 1 to 2 listed above to activate the “Auto Scan” function for cable signals.
2. Select “Cable” and press SET button.
3. Press ▲▼ button and SET button to select “Cable Type”. Select “STD”, “IRC” or “HRC” and press SET button.

NOTE: STD, IRC and HRC identify various types of cable TV systems. Contact your local cable company for the type of cable system that exists in your particular area.

4. Press ▲▼ button to select “Scan” and press SET button to start channel scanning.

NOTE: It takes several minutes to complete the wholes scanning process; the percentage bar displays the progress.

5. When the scan has been completed, “Scan finish.” message will be displayed. Press OPTION or EXIT button to leave this window. Press CH+ and CH- buttons to verify the channels found and memorized.

Manual Scan

Manual Scan allows you to individually add new channels into memory without running Auto Scan.

1. On the “Channel Search” menu page, select “Manual Scan” and press SET button. There are two sub-menu are listed. Choose the channel map you are using and press SET button.

(1) Off Air

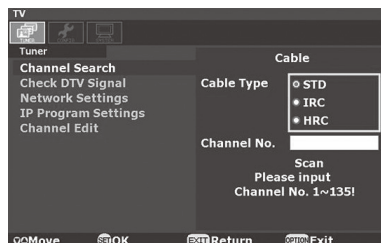
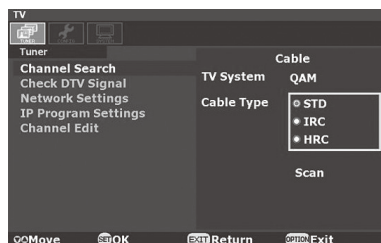
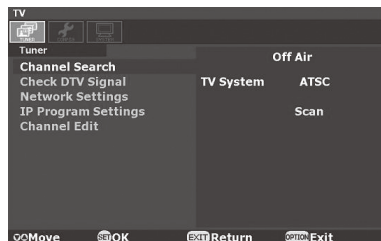
For Off Air additions, enter the new channel number on the remote control’s numeric key pad. Press ▼ button to select “Scan”, and press SET button to scan for and load the channel.

(2) Cable

When adding Cable channels, verify your cable type, “STD”, “IRC” or “HRC”, and enter the new channel number on the remote control’s numeric keypad. Press ▼ button to select “Scan”, and press SET button to scan for and load the channel.

The scanned channels will appear if the desired scanning channel has been searched successfully.

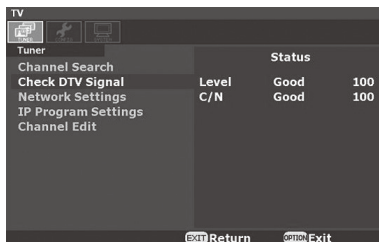
2. When finished, press OPTION or EXIT button to leave this window.



Check DTV Signal

This function indicates the status for the Digital TV signal level and the C/N.

1. On the “Tuner” menu page, press ▲▼ button to select “Check DTV Signal” and press SET button.
2. The status for the Digital TV signal level and the C/N will be indicated. [Good/ Normal/ Weak: 0–100]

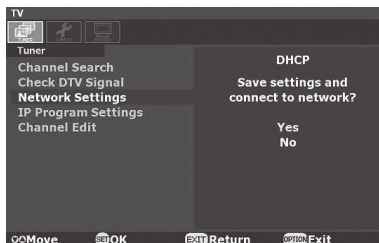


Network Settings

DHCP

This module will automatically attempt to establish a network connection using DHCP when an active network cable is connected. You can also manually attempt to connect by selecting “DHCP” from the “Network Settings” on the “Tuner” menu page.

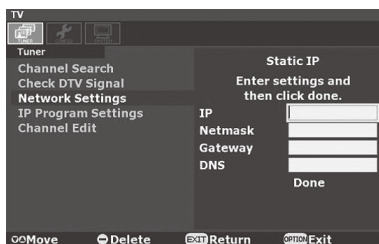
1. On the “Network Settings”, press ▲▼ button to select “DHCP” and press SET button.
2. Select “Yes” and press SET button to connect. (To confirm a successful connection, select “System Information” on the “System” menu page to check for the presence of an IP address.)



Static IP

If desired, this module can be manually configured to use a static IP address by following the instructions below. (Contact your network administrator to acquire the correct values for each parameter before making the changes.)

1. On the “Network Settings”, press ▲▼ button to select “Static IP” and press SET button.
2. Press the numeric buttons on the remote control to input the IP Address, Netmask, Gateway and DNS parameters. When finished, select “Done” and press SET button to manually implement the network settings.



IP Program Settings

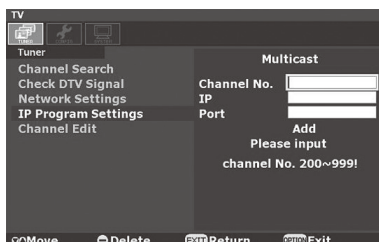
This function sets the channel number for IP channel programs. Add

1. On the “Tuner” menu page, press ▲▼ button to select “IP Program Settings” and press SET button.
2. Select “Add” and press SET button, then there are two sub-menus listed.
 - (1) Unicast
Press ▲▼ button to select “Unicast” and press SET button, you will see the “Channel No.” and “Port” to be typed. Then press ▼ button to select “Add” and press SET button to apply.
 - (2) Multicast
Press ▲▼ button to select “Multicast” and press SET button, you will see the “Channel No.”, “IP Address” and “Port” to be typed. Then press ▼ button to select “Add” and press SET button to apply.



Delete

1. Select “Delete” on the step 2 above and press SET button.
2. Type the “Channel No.” to delete the IP channel program. Then press ▼ button to select “Delete” and press SET button to apply.

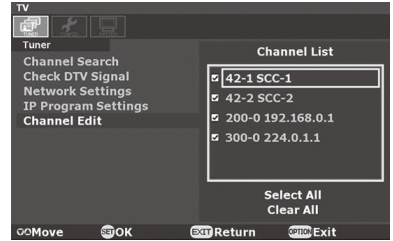


Channel Edit

This feature allows you to select which channels in memory are tuned when using CH + or CH- buttons.

1. On the "Tuner" menu page, press ▲▼ button to select "Channel Edit" and press SET button to display the list of memorized channels. Press SET button again to enter the channel list.
2. Press ▲▼ button to select each channel in the list. Pressing SET button on a checked channel will remove it from the list (skip), while pressing SET button on an unchecked channel will add it to memory.

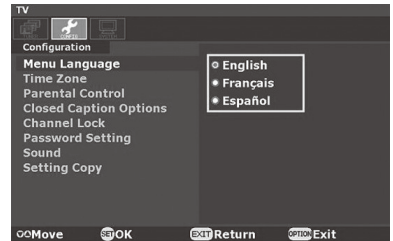
NOTE: When IP channels are listed, the setup IP address is displayed beside the channels.



Menu Language

This function selects OSD menu Language.

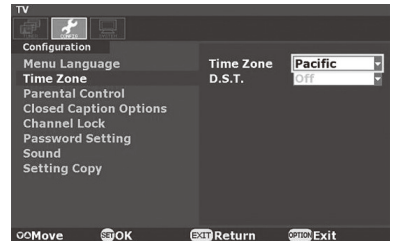
1. On the "Configuration" menu page, press ▲▼ button to select "Menu Language" and press SET button.
2. Press ▲▼ button to select OSD Menu Language and press SET button to apply.



Time Zone

This function selects the Time Zone and D.S.T. (Daylight Saving Time) settings.

1. On the "Configuration" menu page, press ▲▼ button to select "Time Zone" and press SET button.
2. Press ▲▼ to highlight "Time Zone" and press SET button.
3. Press ▲▼ to select the "Time Zone" and press SET button.
4. Press ▲▼ to highlight "D.S.T." and press SET button.
5. Press ▲▼ to select the "D.S.T." and press SET button.

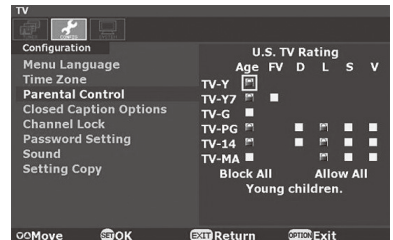


Parental Control

Parents can block certain types of programming based on the rating and content.

NOTE: This function is protected by a password.

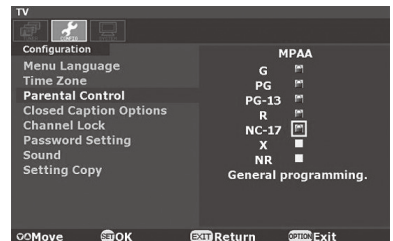
1. On the "Configuration" menu page, select "Parental Control" and press SET button.
2. Enter your password. The default password is "0000". Then select "OK" and press SET button. There are three sub-menus are listed.
 - (1) U.S. TV Rating
 - (2) MPA
 - (3) RRT(Region Rating Table)



NOTE: RRT is the Region Rating Table downloadable function.

3. Select "U.S. TV Rating", "MPAA" or "RRT", and press SET button. Then you will see the U.S. TV Rating system, MPAA system or Region Rating Table.
4. Press ▲▼ +- buttons and SET button to activate the appropriate restrictions.

NOTE: Blocking one type of programming will automatically block all higher rated programming also, however it is possible to unlock this programming while keeping the desired programming blocked.



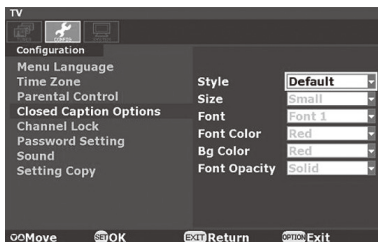
Closed Caption Options

This function selects Closed Caption Option, Font Size, Font Color, Back Ground Color and Font Opacity.

1. On the “Configuration” menu page, press ▲▼ button to select “Closed Caption Option” and press SET button.

NOTE: When “Default” is selected for the Style, default setting for all selection is used.

2. Press ▲▼ to highlight the desired option and press SET button.
3. Press ▲▼ to select the desired selection and press SET button.



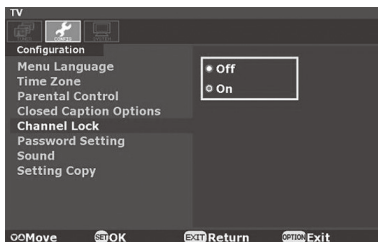
Channel Lock

The Channel Lock function controls the display of channels. When Channel Lock is “On”, the same channel is fixed until unlocked with a password.

NOTE: This function is protected by a password.

When Channel Lock function is “On”, the Channel Search cannot be used.

1. On the “Configuration” menu page, press ▲▼ button to select “Channel Lock” and press SET button.
2. Enter your password. Then select “OK” and press SET button. The default password is “0000”.
3. Select “On” or “Off” and press SET button.

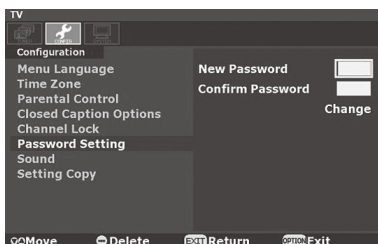


Password Setting

The password controls access to “Parental Control”, “Channel Lock”, “Setting Copy” and “Reset” functions. Therefore, be sure to keep a record of or memorize the new password.

The default password is “0000”.

1. On the “Configuration” menu page, press ▲▼ button to select “Password Setting” and press SET button.
2. Enter your password on the remote control’s numeric key pad. Then select “OK” and press SET button.
3. Enter “New Password” and “Confirm Password” on the numeric key pad. Then select “Change” and press SET button to change the password.

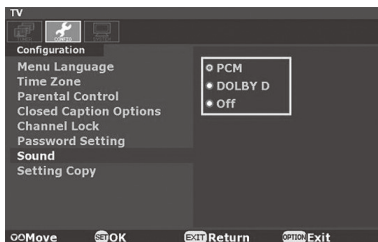


Sound

This function selects S/PDIF output format.

1. On the “Configuration” menu page, press ▲▼ button to select “Sound” and press SET button.
2. Press ▲▼ to select the S/PDIF output format and press SET button.

NOTE: When “Off” is selected, the S/PDIF output will be muted.



Setting Copy

This function export or import the settings of this module via USB flash device.

The settings are Searched channels, Network Settings, IP Program Settings, Channel Edit, Menu Language, Time Zone, Parental Control, Closed Caption Options, Channel Lock, Password Setting, Sound and Information OSD.

NOTE: This function is protected by a password.

Export

1. Insert your USB flash drive to the USB port of this module.
2. On the "Configuration" menu page, press ▲▼ button to select "Setting Copy" and press SET button.
3. Enter your password. Then select "OK" and press SET button. The default password is "0000".
4. Select "Export" and press SET button.
5. Select "Yes" and press SET button. Then the module's settings data will be exported to your USB flash drive.
6. When the export has been completed correctly, "Export succeeded." message will be displayed.

NOTE: If an error message is displayed, operate according to the message content.

Import

1. Insert your USB flash drive with the module's settings data to the USB port of this module.
2. On the "Configuration" menu page, press ▲▼ button to select "Setting Copy" and press SET button.
3. Enter your password. Then select "OK" and press SET button. The default password is "0000".
4. Select "Import" and press SET button.
5. Select "Yes" and press SET button. Then the exported settings data will be imported from your USB flash drive.
6. When the import has been completed correctly, "Import succeeded." message will be displayed.

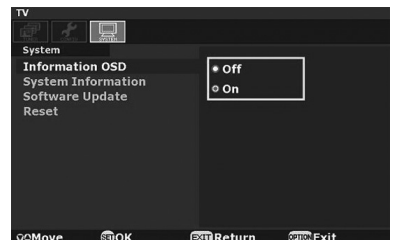
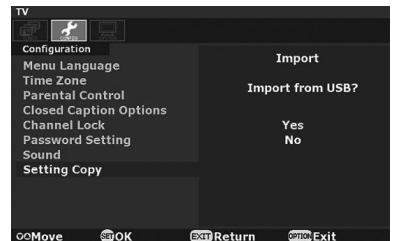
NOTE: If an error message is displayed, operate according to the message content.

NOTE: When "Static IP" is selected in the "Network Settings", the IP Address, Netmask, Gateway, and DNS settings will be copied as they are, so change these settings to appropriate values after import.

Information OSD

The Information OSD displays channel, signal source, resolution and (if available) programming data on the screen upon the channel change.

1. On the "System" menu page, press ▲▼ button to select "Information OSD" and press SET button.
2. Press ▲▼ button to select "On" or "Off" and press SET button.



System Information

This function displays the software version and the network settings.

1. On the “System” menu page, press ▲▼ button to select “System Information”.
2. Press SET button. Then system information will be displayed.

Software Update

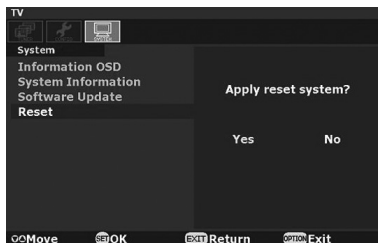
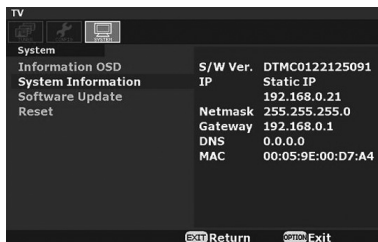
This function is for service use only.

Reset

This function returns all OSD settings to their default settings. Password is also reset to default.

NOTE: This function is protected by a password.

1. On the “System” menu page, press ▲▼ button to select “Reset” and press SET button.
2. Enter your password. Then select “OK” and press SET button. The default password is “0000”.
3. Select “Yes” and press SET button, then all settings will be returned to the default value.



Controlling the module via LAN Control

This module can be controlled by connecting a personal computer via this module's Ethernet port.
NOTE: This LAN control can not control the LCD monitor.

1. Connection

First turn off the power of the LCD monitor and the computer, then make connection with LAN cable.
NOTE: Use a category 5 or higher LAN cable.

2. Network Setting

Set the IP address of the module on the "Network Settings" OSD menu.

NOTE: Refer to the "OSD Controls" - "Network Settings" section of this manual for the IP address setting.

3. Operation

- 1) Access is gained to the HTTP server function by starting the Web browser on the computer via the network connected to the module, then entering the following URL.

http://<the module's IP address>

Example: When the IP address of the module is "192.168.0.1", the URL is
http://192.168.0.1

- 2) Click the button on the control panel of the computer to execute the function or the setting.

NOTE: Refer to the "Basic Operation" section of this manual for the function.

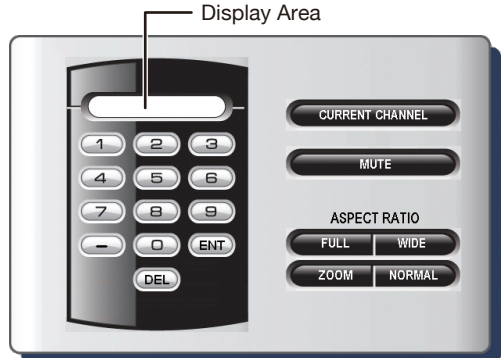
Example 1: Direct Channel Setting

Clicking numeric buttons


[1],[2],[3],[4],[ENT] will change the channel to "123-4".

Example 2: Current Channel Read

Clicking the [CURRENT CHANNEL] button will display the current channel number to the Display Area.



Troubleshooting

Problem	Solution
No picture, but a message is displayed.	<ul style="list-style-type: none"> • Be sure to perform a channel scan before you watch the TV program. • Check to see if antenna/cable is properly connected.
No picture	<ul style="list-style-type: none"> • Check to make sure that Video Input is selected to "OPTION". • Check to see if this module is properly installed. Move them away from the monitor if necessary.
No sound	<ul style="list-style-type: none"> • Check to see if monitor's speaker cable is properly connected. • Check to see if mute is activated. • Check to see if volume is set at minimum. • Check to make sure that Audio Input is selected to "OPTION". • Check monitor's Internal/External speaker switch.
No sound from S/PDIF out	<ul style="list-style-type: none"> • Check to see if optical cable is properly connected. • Check to see if audio output format (PCM/DOLBY D) for "Sound" setting is suitable for your digital audio system. • Check to see if audio output format setting is not set to "Off".
Not all channels are available after performing an Auto Scan	<ul style="list-style-type: none"> • Perform an Auto Scan to scan these missing channels. Once the tuner picks up the signal, all the transmission parameters will be stored in tuner's memory automatically.
No Closed Caption displayed	<ul style="list-style-type: none"> • Make sure the channel you are watching carries closed caption information. • Press the  button on the Remote Control to check for closed caption data output.
IPTV does not work	<ul style="list-style-type: none"> • Check to see if LAN cable is properly connected. • Check to see if the network settings of both of this module and your system is correct.
Remote control does not work	<ul style="list-style-type: none"> • Make sure the batteries are inserted properly. • Test the batteries for strength/life. • Make sure to point the remote directly at the sensor on the monitor. • Check if the remote is in Remote ID mode. • The remote control may not function when in direct sunlight or when there is strong illumination on the remote sensor of the monitor.
USB Flash Drive is not recognized	<ul style="list-style-type: none"> • Check to see if USB Flash Drive is properly connected. • Check to see if USB Flash Drive meets the requirements. (See USB Flash Drive Requirements page English-15.)

Specifications

TV	System	ATSC/Clear QAM
	Channel Coverage	ATSC (8VSB): 2-69 ch Digital Cable(Clear 64/256 QAM): 1 – 135 ch
Format Decoding	Video	MPEG-2 MP@HL and MP@ML H.264/AVC main and high profile to level 4.1 VC-1 advanced profile @ level 3 VC-1 simple and main profile
	Audio	AAC LC, AAC LC+SBR Level 2, AAC+Level 2, AAC+Level 4 Dolby Digital, Dolby Digital Plus * MPEG I Layer1, 2, 3 Windows media audio
IPTV	Streaming Type	Unicast, Multicast
	Network Protocol	Ethernet IEEE 802.3 TCP/IP, UDP/IP, IPv4, HTTP 1.1, DNS Client, DHCP Client
	Streaming Protocol	RTP (Real-time Transport Protocol)
	Multicast Protocol	IGMP v2/v3
Interface	Antenna Input	F Type Connector
	Audio Output	Digital Audio S/PDIF Optical Connector
	Ethernet	RJ-45 Ethernet Port (10/100 Mbps Fast Ethernet)
	USB	USB 2.0 Type A (for USB Flash drive) Load Current: Maximum 0.5A USB Flash Drive Requirements <ul style="list-style-type: none"> • Capacity: 512MB - 16GB • File System: FAT, FAT32 • Allocation unit size: 2KB - 64KB
OSD language		English/ French/ Spanish
Power Supply		+16VDC (from Option slot interface)
Power Consumption		5.8W
Operational Environment	Temperature	5 - 40°C
	Humidity	20 - 80% (without condensation)
Storage Environment	Temperature	-10 - 60°C
	Humidity	10 - 90% (without condensation)
Dimensions	Net	180.0 mm(W) x 30.0 mm(H) x 119.0 mm (D)
	Gross	261.0 mm(W) x 83.5 mm(H) x 196.0 mm (D)
Weight	Net	0.6kg
	Gross	0.9kg
Complied Regulatory and Guidelines		FCC : Class B, BETS-7
Accessories		User's manual
Limited Warranty		3 Years Parts and Labor

*Dolby Digital: Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

Limited Warranty

NEC Display Solutions of America, Inc. (hereinafter “NEC DISPLAY SOLUTIONS”) warrants this Product to be free from defects in material and workmanship and, subject to the conditions set forth below, agrees to repair or replace (at NEC DISPLAY SOLUTIONS_ sole option) any part of the enclosed unit which proves defective for a period of three (3) years from the date of first consumer purchase. Spare parts are warranted for ninety (90) days. Replacement parts or unit may be new or refurbished and will meet specifications of the original parts or unit. This warranty gives you specific legal rights and you may also have other rights, which vary from state to state. This warranty is limited to the original purchaser of the Product and is not transferable.

This warranty covers only NEC DISPLAY SOLUTIONS-supplied components. Service required as a result of third party components is not covered under this warranty. In order to be covered under this warranty, the Product must have been purchased in the U.S.A. or Canada by the original purchaser. This warranty only covers Product distribution in the U.S.A. or Canada by NEC DISPLAY SOLUTIONS. No warranty service is provided outside of the U.S.A. or Canada. Proof of Purchase will be required by NEC DISPLAY SOLUTIONS to substantiate date of purchase. Such proof of purchase must be an original bill of sale or receipt containing name and address of seller, purchaser, and the serial number of the product.

It shall be your obligation and expense to have the Product shipped, freight prepaid, or delivered to the authorized reseller from whom it was purchased or other facility authorized by NEC DISPLAY SOLUTIONS to render the services provided hereunder in either the original package or a similar package affording an equal degree of protection. All Products returned to NEC DISPLAY SOLUTIONS for service MUST have prior approval, which may be obtained by calling 1-800-632-4662. The Product shall not have been previously altered, repaired, or serviced by anyone other than a service facility authorized by NEC DISPLAY SOLUTIONS to render such service, the serial number of the product shall not have been altered or removed. In order to be covered by this warranty the Product shall not have been subjected to displaying of fixed images for long periods of time resulting in image persistence (afterimage effects), accident, misuse or abuse or operated contrary to the instructions contained in the User’s Manual. Any such conditions will void this warranty.

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